

## ABSTRACT

[0052] This disclosure provides a system for efficiently processing a data set. More particularly, image data such as volumetric data are stored in a spread memory fashion, with image data subsets occupying only a fraction of each page. Each memory page is sized to roughly map to processor cache size (or a section thereof), such that image data is always mapped to one or more predetermined fractions of processor cache. By keeping processing parameters (e.g., look-up tables and buffers) in the remainder of cache, the system effectively locks those parameters against overwrite by the image data. This system facilitates the use of conventional workstations, laptops and other machines not enhanced for processing large or complicated data sets. It also extends capabilities of both un-enhanced and enhance machines, permitting them to process data more efficiently.